

Notice of Allowability

Application No.

08/995,715

Applicant(s)

GENNADIEVICH, IVANOV
ANATOLY

Examiner

Jeffery A. Brier

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2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response filed on 10/03/2005.
2. ☒ The allowed claim(s) is/are 48,50,55-61,67,69,71,73,75-78,80 and 81.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview held on 1/11/2006 with Gordon Coplein and in a facsimile from Gordon Coplein on 1/12/2006. This examiner and Gordon Coplein discussed proposed changes to the claims on 12/14/2005, 12/19/2005, 12/22/2005, 1/6/2006, and 1/11/2006 by telephone which culminated in the 1/11/2006 telephone interview and the 1/12/2006 facsimile transmitted proposed claim amendments. The following examiner's amendment to the claims incorporates the proposed changes into the claims.

The application has been amended as follows:

Replace the claims with following set of claims.

AMENDMENTS TO THE CLAIMS

Claims 1-47. Canceled.

48. (Currently amended) An image display system for forming an image on a single image display surface by image blocks comprising:

(a) at least one complementary screen of one of light emitting or light source modulating devices producing light in a two dimensional array of N (a real number) pixels, from which array of pixels a plurality of raster elements are generated;

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(b) a raster multiplying system for parallel scanning image blocks of a single image display surface comprising an array of optically interrelated light dividing elements, each said light dividing element to divide the light of said plurality of raster elements of the complementary screen into parts, a first section of said array arranged to directly receive light from said complementary screen, a part of which directly received light is passed to at least one other section of said array, the light directly received by said first section of said array and the light passed to said at least one other section of said array divided into components to form copies of the raster elements, with said copies of said raster elements forming corresponding raster elements in P image blocks, each block of said P image blocks generally comprising a two dimensional array of said raster element copies;

(c) an array of controllable modulators located after said raster multiplying system, each modulator of said array to independently modulate the raster elements of one of said P image blocks so that light in each block is modulated separately and simultaneously; and

(d) a single image display surface on which said P image blocks of a total number of M pixels are formed and displayed, where the number M exceeds the number N and where said surface preceding components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen.

Claim 49. Canceled.

50. (Previously presented) A system as in claim 48, further comprising a plurality of said complementary screens.

Claims 51-54. Canceled.

55. (Previously presented) A system as in claim 71 further comprising a plurality of said complementary screens.

56. (Currently amended) A system as in claim 71 further comprising means for optic compression of said plurality of generated raster elements for increasing the brightness and pixel density of a scanning light beam.

57. (Currently amended) A method for forming an image on an a single image display surface by forming a plurality of ~~constituent~~ blocks of said image, so that the image is presented as comprised of a plurality of image blocks, comprising the steps of:

(a) providing at least one complementary screen having a two dimensional array of N pixels and generating from said array of pixels a plurality of raster elements;

(b) using a raster multiplying system for parallel scanning image blocks of the single image display surface comprising an array of optically interrelated light dividing elements arranged so that a first section of said array directly receives light from said complementary screen light and passes another part of the directly received light to another section of said array, dividing the light directly received by said first section of

said array and the light passed to said at least one other section of said array into components to form copies of the raster elements, said copies of said raster elements forming corresponding raster element in P image blocks, each block of said P image blocks generally comprising a two dimensional array of raster element copies;

(c) independently modulating said beam components corresponding to the raster element copies of each of said P image blocks;

(d) repeating the procedure of generating other raster elements from said complementary screen; and

(e) displaying the P image blocks having a total number of M pixels on a the single image display surface, where M is greater than N.

58. (Currently amended) A method as in claim 57 further comprising the step of using a plurality of said complementary screens.

59. (Currently amended) A method as in claim 57 wherein a said raster element comprises more than one pixel.

60. (Currently amended) A method as in claim 59, further comprising the step of subjecting a said generated raster element to additional optical compression for increasing the brightness and pixel density of a sensitive plane scanning beam.

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61. (Currently amended) A method as in claim 57 wherein a said raster element is of the size of only one pixel.

Claims 62-66. Canceled.

67. (Currently amended) A method as in claim 73 wherein a said raster element comprises a plurality of pixels.

Claim 68. Canceled.

69. (Currently amended) A 3D holographic image display system comprising:

(a) at least one complementary screen of one of light emitting or light source modulating devices in a two dimensional array of N (a real number) pixels, from which array of pixels a plurality of raster elements are generated;

(b) a raster multiplying system for parallel scanning of hologram blocks of a single surface comprising an array of optically interrelated light dividing elements, each said light dividing element to divide the light of said plurality of raster elements of the complementary screen into parts, a first section of said array arranged to directly receive light from said complementary screen, a part of which directly received light is passed to at least one other section of said array, the light directly received by said first section of said array and the light passed to said at least one other section of said array divided into components to form copies of said generated raster

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elements of a said at least one complementary screen, with said raster element copies forming a raster in P hologram blocks with each block generally comprising a two dimensional array of said raster element copies;

(c) an array of controllable modulators located after said raster multiplying system, each modulator of said array to independently modulate the raster elements of one of said P hologram blocks;

(d) a single surface on which a hologram of said P hologram blocks of total number of M pixels are formed, where the number M exceeds number N and where said surface preceding components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen; and

(e) a coherent light producing means for producing a 3D holographic image from said P hologram blocks of said single surface.

Claim 70. Canceled.

71. (Currently amended) A system as in claim 48 used for image recording further comprising:

(e) instead of said single image display surface a photosensitive plane on which an outer image to be recorded is produced, said outer image comprising a plurality of said image blocks, each image block being of a two dimensional array of pixels, and all said image blocks comprising said M pixels, where the number M exceeds the number

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N, and where said system components of (a), (b) and (c) are placed in the mentioned order of the light path of the complementary screen; and

(f) means to scan said outer image on said photosensitive plane into electric signals for recording.

Claim 72. Canceled.

73. (Currently amended) A method as in claim 57 used for image recording wherein said single image display surface of step (e) comprises a photosensitive plane on which an outer image is produced and further comprising that step (b) is followed by:

(f) converting the image information received on said photosensitive plane by the projection of said beam components into P electric signals, one signal for one of said P image blocks, for recording received information for P separate image elements; and

(g) repeating the procedure by successively generating other raster elements on said complementary screen, to simultaneously scan each of said P image blocks.

Claim 74. Canceled.

75. (Currently amended) A method as in claim 57 further comprising the step of generating a 3D image from said single image display surface.

76. (Currently amended) A method as in claim 57 further comprising the step of subjecting said plurality of raster elements of said complementary screen to additional optical compression for increasing brightness and pixel density.

77. (Previously presented) A system as in claim 48 further comprising means for optic compression of complementary screen raster elements for increasing brightness and pixel density.

78. (Previously presented) A system as in claim 48 further comprising partly transparent mirrors as said light dividing elements.

Claim 79. Canceled.

80. (Currently amended) An image display system as claimed in claim 48 further comprising a light conductor to transmit the light from said complementary screen to the single image surface via said raster multiplying system light receiving part.

81. (Currently amended) A method as claimed in claim 57 further comprising using a light conductor to transmit the light from said complementary screen to said single image display surface via said raster multiplying system light receiving part.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach or suggest parallel scanning image blocks onto a single display surface by forming copies of an image formed by a complementary screen and separately and simultaneously modulating each copy corresponding to one block of the image blocks in order to form a complete higher resolution image on a single image display surface by the plurality of image blocks.

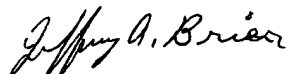
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, reading "Jeffery A. Brier".

Jeffery A Brier
Primary Examiner
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